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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/820,156	04/08/2004	Frank Becherer	26092	7041
<div>20529 7590 07/31/2007</div> <div>NATH & ASSOCIATES 112 South West Street Alexandria, VA 22314</div>				
			EXAMINER NORRIS, JEREMY C	
			ART UNIT 2841	PAPER NUMBER
			MAIL DATE 07/31/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

EL

Office Action Summary	Application No. 10/820,156	Applicant(s) BECHERER, FRANK	
	Examiner Jeremy C. Norris	Art Unit 2841	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16,17 and 21-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 16,17 and 21-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 16 rejected under 35 U.S.C. 102(b) as being anticipated by US 5,012,386 (McShane).

McShane discloses, referring primarily to figure 2, a plastic injected part comprising a printed circuit board (12) that exhibits; at least one contact element (30) for connecting with a mating contact, secured to the circuit board, and a plastic layer (58, col. 5, lines 10-20), which is applied to at least one side of the circuit board, wherein the contact element runs from the circuit board through the plastic layer and projects from this plastic layer to connect the mating contact, the plastic extends from the plastic layer outward and laterally as a pot shaped housing wall of a housing, the plastic layer and housing wall forming a contiguous structure, and the plastic layer and the housing wall are produced from the same material [claim 16].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

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the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 17 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over McShane in view of US 5,569,738 (Choi).

Regarding claim 17, McShane discloses the claimed invention as described above including in which the plastic layer is applied to one or both sides of the circuit board and in which at least one conductor (shown connected to wire bond 56, but not specifically referenced) is positioned on the surface of the circuit board and the plastic layer covers the conductor and an adjacent surface area of the circuit board. McShane does not specifically disclose that the plastic layer is a thermoplastic material with a melting point greater than 80° C [claim 17]. However, it is well known in the art to use PEI, a known thermoplastic material with a melting point greater than 350° C as a housing material in electronics as evidenced by Choi (col. 1, lines 10-25). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use PEI as the housing material in the invention of McShane as is known in the art and evidenced by Choi. The motivation for doing so would have been to use a material with good heat resistance.

Regarding claim 23, McShane discloses the claimed invention as described above including that the plastic layer is applied to one or both sides of the circuit board and in which at least one conductor (connected to wire bond 56) is positioned on the surface of the circuit board and the plastic layer covers the conductor and an adjacent surface area of the circuit board except McShane does not specifically disclose that the plastic layer is a thermoplastic material with a melting point greater than 350° C [claim 23]. However, it is well known in the art to use PEI, a known thermoplastic material with a melting point greater than 350° C as a housing material in electronics as evidenced by Choi (col. 1, lines 10-25). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use PEI as the housing material in the invention of McShane as is known in the art and evidenced by Choi. The motivation for doing so would have been to use a material with good heat resistance.

Claims 21, 22, 24, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over McShane in view of Choi as applied to claims 17 and 23 above, and further in view of US 5,807,793 (Scari).

Regarding claim 21, the modified invention of McShane teaches the claimed invention as described above with respect to claim 17 except modified McShane does not specifically teach that the circuit board consists of an epoxide fiberglass laminate with an interlaced resin system [claim 21]. However, it is well known in the art to form circuit boards out of epoxide fiberglass laminates with an interlaced resin system as evidenced by Scari (col. 1, lines 1-15 and col. 2, lines 15-30). Therefore, it would have

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been obvious to one of ordinary skill in the art at the time of invention to form the circuit board of modified McShane out of epoxide fiberglass laminates with an interlaced resin system as is known in the art and evidenced by Scari. The motivation for doing so would have been to form a circuit board which has low surface roughness (Scari col. 2, lines 15-20).

Regarding claim 22, the modified invention of McShane teaches the claimed invention as described above with respect to claim 17, including that the contact element is solder connected to the circuit board (col. 5, lines 60-65) except modified McShane does not specifically teach that the circuit board consists of an epoxide fiberglass laminate with an interlaced resin system [claim 22]. However, it is well known in the art to form circuit boards out of epoxide fiberglass laminates with an interlaced resin system as evidenced by Scari (col. 1, lines 1-15 and col. 2, lines 15-30). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to form the circuit board of modified McShane out of epoxide fiberglass laminates with an interlaced resin system as is known in the art and evidenced by Scari. The motivation for doing so would have been to form a circuit board which has low surface roughness (Scari col. 2, lines 15-20).

Regarding claim 24, the modified invention of McShane teaches the claimed invention as described above with respect to claim 23 except modified McShane does not specifically teach that the circuit board consists of an epoxide fiberglass laminate with an interlaced resin system [claim 24]. However, it is well known in the art to form circuit boards out of epoxide fiberglass laminates with an interlaced resin system as

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evidenced by Scari (col. 1, lines 1-15 and col. 2, lines 15-30). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to form the circuit board of modified McShane out of epoxide fiberglass laminates with an interlaced resin system as is known in the art and evidenced by Scari. The motivation for doing so would have been to form a circuit board which has low surface roughness (Scari col. 2, lines 15-20).

Regarding claim 25, the modified invention of McShane teaches the claimed invention as described above with respect to claim 23, including that the contact element solder is connected to the circuit board. Modified McShane does not specifically teach that the circuit board consists of an epoxide fiberglass laminate with an interlaced resin system [claim 25]. However, it is well known in the art to form circuit boards out of epoxide fiberglass laminates with an interlaced resin system as evidenced by Scari (col. 1, lines 1-15 and col. 2, lines 15-30). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to form the circuit board of modified McShane out of epoxide fiberglass laminates with an interlaced resin system as is known in the art and evidenced by Scari. The motivation for doing so would have been to form a circuit board which has low surface roughness (Scari col. 2, lines 15-20).

Response to Arguments

Applicant's arguments with respect to claims 16, 17, and 21-25 have been considered but are moot in view of the new ground(s) of rejection. However, the

Examiner draws particular attention to Choi col. 4, lines 52-58 where Choi specifically states that the PEI material is applicable for electronics.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

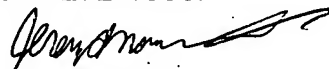
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy C. Norris whose telephone number is 571-272-1932. The examiner can normally be reached on Monday - Friday, 9:30 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on 571-272-1984. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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JCSN